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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/647,331	01/30/2001	Paul Alfred Dickinson	CARP-0085	5411

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EXAMINER	
OSTRUP, CLINTON T	
ART UNIT	**PAPER NUMBER**
1614	12

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/647,331	Applicant(s) DICKINSON ET AL.	
	Examiner Clinton Ostrup	Art Unit 1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,18-35 and 38-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,18-35 and 38-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claims 1-15, 18-35, and 38-55 are pending in this application.

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 53-56 have been renumbered as claims 52-55 because there was no claim 52 presented in this application.

The claims are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

Status of the Claims

Applicant describes claims 1-35 and 38-56 as pending in the application; however, claims 16 and 17 were canceled in Paper No. 11, filed January 21, 2003 and claims 53-56 have been renumbered as claims 52-55 as described above. Thus, currently claims 1-15, 18-35, and 38-55 are pending in this application. **Response to Applicant's Arguments/Amendment**

Claim Rejections - 35 USC § 102

Applicant's arguments and amendment filed January 21, 2003, Paper No. 11, to the rejection of claims 6-10, 24, and 33 under 35 U.S.C. 102(b) have been fully considered and deemed persuasive. Therefore, the said rejection has been withdrawn. However, the arguments and amendments are not found convincing for claims 1-5, 12-15, 18-23, 25-32, and 34-35 for the reasons set forth in Paper No. 8, mailed March 18, 2002 and the said rejection is further being applied to newly submitted claims 39-55.

Applicant argues that Glaxo Group Limited (WO 96/19968), herein referred to as WO 96/19968, does not teach that upon aerosolization, the first and second particulate materials are segregated into a respirable first fraction and a non-respirable size. Applicant then goes on to argue that WO 96/19968 actually teaches away from a non-respirable second particulate because the reference teaches that the second particulate material is preferred as smaller sizes.

The examiner respectfully disagrees. WO 96/19968 teaches that the sugars will have a particle size of less than 100 microns such as less than about 70 microns, for example less than 20 microns. Thus WO 96/19968 clearly anticipate the claimed range of the second particulate material in claims 1-2, 39, 42-44, 47-49, and 52-53. Moreover lactose is a sugar, thus meeting the specific limitations of claims 40-41, 45-46, and 50-51. Therefore, WO 96/19968 anticipates instant claims 1-5, 12-15, 18-23, 25-32, 34-35 and 39-55.

Claim Rejections - 35 USC § 103

Applicant's arguments with respect to claims 1-37 as being unpatentable over the Glaxo Group Limited WO 96/19968 and further in view of Glaxo Group Limited WO

95/24889 and Schultz et al., WO 92/06675 have been considered but are moot in view of the new ground(s) of rejection.

New Claim Rejections

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11, 20, and 22 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 claims "the composition comprises at least 0.001 wt% and up to 20 wt% of the total of the first and second particulate material present." It is unclear what applicant is attempting to claim because the claim does not make grammatical sense.

Claims 20 and 22 are rejected because in line 2 of these claims they claim "or any mixture thereof", however, there is only one medicament to chose from. Thus, it is unclear what constitutes the said "mixture thereof."

MAINTAINED Claim Rejection - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 12-15, 18-23, 25-32, 34-35 and 39-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Glaxo Group Limited WO 96/19968. Glaxo Group Limited WO 96/19968 discloses a pharmaceutical aerosol formulation for the administration of medicaments by inhalation comprising, a particulate medicament, at

least one sugar, and a fluorocarbon or hydrogen containing chlorofluorocarbon propellant. See: abstract and page 1, line 30 – page 2, line 1. The reference teaches the specific medicaments of instant claims 18-20 and the specific propellants of instant claims 13-15. See: page 2, line 21 – page 5, line 14.

Glaxo Group Limited WO 96/19968 describes the particulate medicament as having a diameter of less than 15 micrometers, preferably in the range of 1 to 10 micrometers, thus meeting the size limitations of claims 1, 5, 24, and 33. See: page 2, lines 10-20. Moreover, the reference teaches and claims a combination of medicaments, which meet the specific limitations of instant claims 21-23. See: page 2, line 21 – page 4, line 11 claims 7-10 and claims 14-16. Furthermore, the reference teaches that proteins and peptides such as insulin and glucagon may be used as therapeutic agents, thus meeting the specific limitation of instant claim 17. See: page 3, lines 1-10.

Glaxo Group Limited WO 96/19968 further describe the sugar as having a particle size of less than 100, including sizes of 70 and 20 microns as examples of particle sizes under 100 microns, which meets the specific limitations of claims 1, 2, 24, and 33. See: page 4, lines 17-25. Glaxo Group Limited WO 96/19968 also describe the ratio of medicament to sugar as being between the range of 1:0.01 to 1:100, preferably 1:0.1 to 1:10, thus meeting the ranges as claimed instantly by claims 3-4. See: page 4, lines 11-16.

The reference teaches that the aerosols may contain surfactants, taste masking agents, buffers, antioxidants and chemical stabilizers, thus meeting the specific

limitations of instant claim 12. See: page 5, line 30 – page 7, line 14. The sugars taught by the reference include lactose, sucrose, mannitol, and dextrose, thus meeting the carbohydrate limitation of instant claims 40-41, 45-46, and 50-51. See: page 4, lines 17-25 and Examples 1-144.

Glaxo Group Limited WO 96/19968 teaches aerosol metered dose inhaler formations and containers which meet the limitations of instant claims 25-28, 31-32 and using the compositions for respiratory disorders. See: page 3, lines 10-23 and page 9, line 24- page 10, line 26.

Therefore, instant claims 1-5, 12-15, 18-23, 25-32, 34-35 and 39-55 are clearly anticipated by WO 96/19968.

New Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glaxo Group Limited **WO 96/19968** as applied to claims 1-5, 12-15, 18-23, 25-32, 34-35 and 39-55 above.

Although the primary reference teaches aerosolized compositions comprising a mixture of particulate materials, as discussed above, the primary reference does not specifically teach the Mohs harness value of instant claim 6, the Carr Index value of claim 7, the solubilities of instant claims 8-9, the amount of propellant as claimed in claim 10, or the amount of percentage of the composition of instant claim 11.

Although WO 96/19968 does not specifically teach the Mohs hardness value, or the Carr index value of instant claims 6-7, these are physical properties of particulates and these physical properties are inherent tot the particles themselves. Furthermore, the working examples of the instant application use lactose as a particulate material, therefore, it is reasonable to expect the lactose particulate material of WO 96/19968 to have the same Mohs hardness value and Carr Index value as claimed instantly.

Regarding the solubility properties of instant claims 8-9, WO 96/19968 clearly anticipates adjusting the solubility of the medicaments and that hydrates can be used to minimize the solubility of the medicament in the propellant. See: page 3, lines 5-10. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the solubility of the medicaments or of lactose, to form a composition with the desired solubility properties for administration of the composition with optimum activity and stability.

While the reference is silent regarding the percent by weight of propellant, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Aller,* 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955).

Finally, it appears the reference teaches the amounts of particulate materials claimed in claim 11, but again differences in concentration will not support the

patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical.

Claims 1, 24, 33, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Glaxo Group Limited WO 96/19968 as applied to claims 1-15, 18-23, 25-32, 34-35 and 39-55 above and further in view of Makino et al., 5,626,871.

Although the primary reference teaches a pharmaceutical aerosol formulation for the administration of medicaments by inhalation comprising, a particulate medicament, at least one sugar, and a fluorocarbon or hydrogen containing chlorofluorocarbon propellant, the primary reference lacks the second particulate material of instant claims 24, 33, and 38.

Makino et al., teach sugars, amino acids, and proteins as dispersion agents that can be used in aerosol formulations and that preparations for intratracheobronchial administration comprising medicaments with or without additives are formulated to particular sizes depending upon the region in the air way that the powder preparation is targeted. See: col. 10, lines 1-52.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the aerosolized composition of Glaxo Group Limited WO 96/19968 by using the particular additives of Makino to form an aerosolized powder formulation which are capable of delivering medicaments, or combinations of medicaments, and targeting the medicament to any region of the airway desired, by simply adjusting the size of the powder.

Conclusion

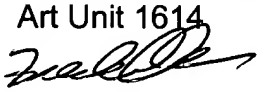
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clinton Ostrup whose telephone number is (703) 308-3627. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marianne Seidel can be reached on (703) 308-4725. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4556 for regular communications and (703) 308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Clinton Ostrup
Examiner
Art Unit 1614

Frederick Krass
Primary Examiner
Art Unit 1614



April 4, 2003